POSTER SESSION

1172 Primary Percutaneous Coronary Intervention in Acute Myocardial Ischemia: High-Risk Patients

Tuesday, April 01, 2003, Noon-2:00 p.m.
McCormick Place, Hall A
Presentation Hour: Noon-1:00 p.m.

1172-92 Circadian Fluctuations in Thrombogenicity in Patients Undergoing Primary Angioplasty for Acute Myocardial Infarction

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Background: A circadian pattern in the onset of AMI with a peak in the morning and evening hours has been previously reported. Circadian variations in hemostatic and physiologic factors with a clotting propensity in the morning have also been suggested. Methods: From a pooled cohort of 3414 pts enrolled in the Primary Angioplasty for Acute Myocardial Infarction trials, we compared angiographic findings and clinical outcomes for pts presenting at 3 time periods (08:00-16:00, n=1830 (54%); 16:00-24:00, n=928 (27%); 24:00-08:00, n=656 (19%). Results: Baseline characteristics were similar, except pts presenting later in the day were more likely to smoke (38% vs 44% vs 46%, p<0.001) and have heart failure (12% vs 16% vs 16%, p<0.005). Angiographic findings and outcomes are shown in the Table.
Conclusions: Patients presenting with AMI tend to have a higher incidence of thrombus and lower pre-PCI TIMI-0/1 flow on their initial angiograms later in the day & during early morning hours. While these findings suggest a diurnal clotting propensity that may have therapeutic implications, there were no differences in outcomes.

Angiographic Findings & Clinical Outcomes. * p<0.05

	08:00-16:00	16:00-24:00	24:00-08:00
Initial thrombus or pre-PCI TIMI-0/1 (%)*	71.7	75.8	77.3
Pre-PCI Stenosis (%)	97 +-6	98+-7	98+-8
Final TIMI-3 (%)	91.7	91.8	91.4
Death, TVR, or reinfarction	-	-	-
In-hospital (%)	5.5	6.6	6.6
6-month (%)	14	15	17
1-year (%)	19	20	22

1172-93 Marked Mortality Risk of Renal Insufficiency in Patients Undergoing Primary Angioplasty for Acute Myocardial Infarction

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Background: Although renal insufficiency (RI) is associated with increased morbidity and mortality in HTN, CHF, and CAD, there is paucity of data regarding its impact in pts undergoing PCI for AMI. Methods: The CADILLAC trial randomized 2,082 pts of any age with AMI within 12 hrs onset without shock to PTCA +/- abciximab vs. stenting +/- abciximab. Pts were categorized based on calculated (Cockroft-Gault) baseline creatinine clearance (CrCl <=60 vs. >60 cc/min). Results: Pts with CrCl <=60 (n=350, 18%) were older, more likely to be female and have HTN, peripheral vascular disease, cerebrovascular disease, smaller stature, and heart failure compared to pts with CrCl >60 cc/min. Outcomes are shown in the Table. Examining CrCl ranges of >60, 50-60, 40-50, 30-40, 20-30, and <20 cc/min, 1-year mortality rates were 2.4%, 7.2%, 12.5%, 15.3%, 32.1% and 44.4% respectively (p<0.001). Bleeding and transfusion requirements were more than 2-fold higher in patients with RI, as was severe (DS>70%) restenosis (21% vs 12%, p<0.05) and infarct artery reocclusion (15% vs 7%, p<0.05). CrCl and anterior MI location were the 2 most powerful independent predictors of 30-day and 1-year mortality by multivariate analysis. Conclusion: Baseline RI is associated with a marked mortality risk after primary angioplasty, similar to the risk of anterior infarction, as well as increased rates of bleeding and restenosis. Newer approaches are required for patients with renal insufficiency to favorably impact their prognosis.

Outcomes

	CrCl <=60, n=350	CrCl>60, n=1583	p value
30-d MACE (%)	10.9	4.8	<0.0001
30-d Death (%)	7.5	0.8	<0.0001
1-year MACE (%)	24.5	16.3	<0.0001
1-year Death (%)	12.7	2.4	0.0001

1172-94 Baseline Serum Creatinine Level Strongly Predicts Risk of Procedural Failure of Percutaneous Coronary Intervention in Patients With Acute Myocardial Infarction: Results From the Japanese Multicenter AMI Registry (JAMI)

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Background: Renal insufficiency has been known to be associated with increased risk of mortality in patients with acute myocardial infarction (AMI). However, little is known regarding the relationship between renal function and procedural outcome of percutaneous coronary intervention (PCI).
Methods: The 1,733 patients with AMI who underwent PCI within 24 hours of onset were analyzed from the Japanese Multicenter Acute Myocardial Infarction registry (JAMI) cohort consisting of 3,029 consecutive patients admitted between January 1999 and July 2001. Patients were divided into three subgroups according to serum creatinine (Cr) concentrations on admission: *Cr1* with Cr<1.2mg/dl, *Cr2* with 1.2mg/dl≤Cr<2.0mg/dl, and *Cr3* with 2.0mg/dl<Cr. The relationship between Cr levels and the incidence of procedural failure of PCI (less than Thrombolysis In Myocardial Infarction (TIMI) flow grade 3) were evaluated by means of logistic regression models. The other baseline characteristics related to failed PCI were also investigated.
Results: Failed procedures were observed in 98 patients (5.7%). The incidences of failed PCI were significantly higher in *Cr2* and *Cr3* compared to *Cr1*. Univariate analyses also indicated that Killip class and prehospital delay were related to failed PCI. Even after adjustment, *Cr2* and *Cr3* remained as independent predictors of failed PCI .
Conclusions: Baseline creatinine level strongly predicts risk of procedural failure of PCI in AMI, not just in patients with severe renal failure.

Serum Creatinine Levels	Failed PCI (%)	Adjusted Odds Ratio* (95% Confidence Interval)	*P* value
Cr1 **(-1.2mg/dl) n=1435**	4.5	1	
Cr2 **(1.2-2.0mg/dl) n=249**	9.6	2.35 (1.43-3.84)	<0.001
Cr3 **(2.0mg/dl-) n=49**	20.4	5.21 (2.47-11.0)	<0.001

*Odds ratios were adjusted by Killip class and prehospital delay.

1172-95 Primary Coronary Angioplasty After Transfer Versus On- Site Thrombolysis in Acute Myocardial Infarction: A Meta-Analysis

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Background: The benefit of Primary Coronary Angioplasty (PCA) compared to thrombolysis (T) have been clearly demonstrated in Acute Myocardial Infarction (AMI). However, the best therapeutic strategy for a patient with AMI presenting to a primary care center without catheterization facilities remains debated. Our objective was to gather all available information from clinical trials having compared transfer of AMI patients to angioplasty centers versus immediate on site T.
Methods: We performed a meta-analysis of all data available from published randomized trials and from presentations in scientific sessions of major cardiology congresses comparing the two strategies. The primary end-point was the combined criteria of Death/ Reinfarction/ Stroke as defined in each trial. Relative Risk (RR) evaluated the treatment effect.
Results: We selected 6 clinical trials including 3750 patients (Maastricht, PRAGUE, AirPAMI, CAPTIM, DANAMI 2, PRAGUE 2). The average delay from randomization to treatment was 15 minutes in T group and 92 minutes in PCA group (p=0.02). The combined criteria was significantly reduced by 42%, 95% confidence interval (CI)=[29% to 53%]; p<0.001 in the group of transfer for PCA compared to the group receiving on-site T. When each parameter of the combined criteria was considered separately, reinfarction incidence was significantly reduced by 68%, 95% CI= [34% to 84%]; p<0.001. All cause mortality was reduced by 19%, 95%CI= [-3% to 36%]; p=0.08 as well as stroke by 48%, 95%CI= [-6% to 74%], p= 0.07.
Conclusion: Even when transfer to a tertiary care center is necessary, PCA remains superior to immediate T. Organization of ambulance systems and pre-hospital management of AMI patients appear now to be the key issues before mechanical reperfusion.